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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/553,297

10/14/2005

Richard Guy Bointon

34999,911

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EXAMINER

LE, MARK T

ART UNIT

PAPER NUMBER

3617

MAIL DATE

DELIVERY MODE

12/08/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                       |  |
|------------------------------|--------------------------------------|---------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/553,297 | <b>Applicant(s)</b><br>BOINTON ET AL. |  |
|                              | <b>Examiner</b><br>MARK T. LE        | <b>Art Unit</b><br>3617               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15, 16 and 19-22 is/are rejected.
- 7) ☒ Claim(s) 14 and 17-18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. In claims 14 and 15, "the spine" lacks antecedent basis. In claim 20, line 2, "the molding" lacks antecedent basis. Correction is required.
2. Claims 1-2, 4, 9-10 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Walker (US 3,952,848).

Walker discloses a neutral section, having all of the features as recited in the instant claims, including glass fiber reinforced rod 1 covered by element 2, and end fittings or connection members 3. Note that elements 1, 2, 3 of Walker are readable as forming a single integral body as claimed. Note that the profile of the neutral section of Walker is readable as having a neutral axis, height, stiffness and dynamic mass, as broadly recited in the instant claims.

Regarding Applicant's arguments directed to the instant claimed statement of intended use "wherein the profile of the neutral section is designed such that, when the neutral section is in use, its neutral axis is aligned closely with the neutral axis of the conductors on its either side and the height of said insulator is chosen so that the stiffness and the dynamic mass of the neutral section closely match those of the conductors on its either side in both the vertical and horizontal planes", note that the neutral section of Walker is readable as having a neutral axis, height, stiffness and dynamic mass that closely match with at least some or certain conductors that have similar neutral axis, height, stiffness and dynamic mass, such that when the neutral section of Walker are used with said certain conductors, the closely match conditions would be achieved; therefore, the instant claimed intended use limitation is considered

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met. Note also that the expressions "aligned closely with" and "closely match", recited in instant claim 1, are relative terms, wherein the degree of similarity or closeness is subjected to different interpretations. Further, note that the conductors as recited in the instant claims are not defined with any specificity that would correspondingly define the profile of the neutral section of the instant claimed invention over the prior art structure. Applicant's argument that the neutral section of Walker when in use does not have the profile closely matching the conductors is not persuasive because Applicant appears to have made the assumption on the basis that the conductors of the instant claimed invention are to have certain specific configuration, stiffness and/or dynamic mass, which are nowhere found in instant claim.

Regarding the instant claimed low friction members recited in instant claims 9-10 and 12, consider member 2 of the British reference which is a low friction member made of low friction material PTFE (See the second paragraph of column 3 of Wakler).

3. Claims 1-2, 4 and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Proud (US 4,018,315).

Proud discloses a neutral section, having all of the features as recited in the instant claims, including glass fiber reinforced rod 11, cover 13, running surface 14, end fittings or connection members 3; wherein, these elements are readable forming a single integral body as claimed. Note that the profile of the neutral section of Proud is readable as having a neutral axis, height, stiffness and dynamic mass, as broadly recited in the instant claims. Regarding Applicant's arguments directed to the instant claimed single integral body, and the instant claimed profile of the neutral section,

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consider the above examiner's response to similar Applicant's arguments directed to Walker.

Regarding the instant claimed pegs recited in instant claim 8, consider the dowel pins described in line 26, column 3 of Proud.

Regarding the instant claimed low friction members recited in instant claims 9 and 10, consider member 14 of the British reference which is readable as a low friction member made of low friction material.

4. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Proud (US 4,018,315) in view of Keithley (US 560,097).

Proud is applied above.

Applicant should also consider the configurations of the trolley wire and current collector structure of Keithley; wherein, upon applying the teaching of Proud in a trolley system having a trolley wire and current collector similar to that of Keithley, it would have been obvious to one skilled in the art to modify contact rail 14 of Proud into a form with two rail portions so as to make it suitable for operations with the contact wheel B of Keithley that has two grooves for rolling on two rail surfaces. Accordingly, such two rail portions of Proud, as modified, are readable as a pair of rails as claimed.

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Proud (US 4,018,315) in view of Ledingham (US 5,310,047).

Proud is applied above.

Regarding the instant claimed glass beads incorporated in the low friction material, note that the use of glass beads to achieve low friction and high impact

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resistance is well known. Note for example, Ledingham, column 6, lines 19-23, wherein, glass beads are cited as one of the known material for low friction and impact resistance. Therefore, it would have been obvious to one skilled in the art to use such well known glass bead in structure 14 of Proud so as to enhance low friction and impact resistant characteristics of the structure.

6. Claims 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Walker (US 3,952,848).

Walker is applied above.

Note that the structure of Walker is made of fiber reinforced composite as claimed; however, Walker does not disclose the amount of glass fiber being used. However, as a matter of common sense, it would have been obvious to one skilled in the art to adjust the mount of reinforcing glass fiber in the structure of walker, e.g. 45%, so as to achieve the expected corresponding strength.

7. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker (US 3,952,848) in view of German reference 1,057,164.

Walker is applied above.

Regarding the instant claimed electrical plates attached to the spine of the neutral section, note that the structure of the German reference; wherein, an electrical plate mounted on the spine of the neutral section to block arc flows. In view of German reference, it would have been obvious to one skilled in the art to use an electrical plate mounted to spine of the neutral section of Walker for blocking arc flows to provide an arc-safe neutral section. As to the plate including a plurality of plates, it would have

been obvious to one skilled in the art to use more than one such plate in the structure of Walker, as modified, for achieving the expected increased safety.

Regarding the instant claimed material as recited in instant claim 16, note that the concept of a choosing material to form a structure for achieving the expected advantages of such material, such as the durability and reliability of the material under the expected operating conditions, is merely a matter of common sense of one skilled in the art. In the instant case, fiber reinforced resin material is well known. Note for example, the material that is used to make the neutral section of Walker. Therefore, it would have been obvious to one skilled in the art to use such well known material for making the components of the structure of Walker for achieving the expected advantages thereof, such as its durability and reliability under expected operating conditions of a trolley wire system.

8. Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Proud (US 4,018,315) in view of Japanese reference 58-4637.

Proud is applied above.

Regarding the instant claimed heater, recited in instant claim 20, note that the use of a heater in a trolley wire system is well known. Note for example, the use of heater wire 6 in the structure of the Japanese reference. In view of the Japanese reference, it would have been obvious to one skilled in the art to use a heater wire, similar to that taught in the Japanese reference, in the neutral section of Proud so as to perform the expected function of presenting ice buildup. Regarding the instant claimed wattage or power of the heating device, as recited in instant claim 21, note that it would

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have been obvious to one skilled in the art to select a suitable power, e.g. 150W, for a heater device of Proud, as modified, or of the Japanese reference such that the selected power is adequate to melt ice but not too great that would cause wasteful of the energy.

Regarding the instant claimed resistor connected in series with a heater element, as recited in instant claim 22, note that the concept of using resistors in an electrical circuit to regulate the electrical current to a heater element is well known (Official Notice is taken). Therefore, it would have been obvious to one skilled in the art to provide resistor(s) in the electrical circuit of the electric heating device of Proud, as modified, in a well known manner so as to properly regulate the power of the heating element.

9. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Proud (US 4,018,315) in view of McCafferty (US 1,940,873).

Proud is applied above.

Regarding the instant claimed upturns at the ends of the structure, as recited in instant claim 19, note that the concept of providing upturns at the ends of a trolley wire connector is well known. Note for example, consider the upturns at ends 15 and 16 of the connector of McCafferty. Therefore, it would have been obvious to one skilled in the art to provide upturns at the ends of the connector or neutral section of Proud, in a manner similar to that taught by McCafferty, so as to ease the sliding surface transition between the connector and the associated wires.

10. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Proud (US 4,018,315) in view of Watson (US 1,868,619).



Proud is applied above.

Regarding the connection members being U-shaped member with two legs and being in connection with the neutral section, as recited in instant claims 5-7, consider the end connections of the neutral section of Watson, which include U-shaped wires each having a base of the U shape interconnecting side leg portions 16 and 17. In view of Watson, it would have been obvious to one skilled in the art to form connections at the ends of the neutral section of Proud, in a manner similar to that taught by Watson, so as to achieve a strong connection and better arc control for enhanced safety. Note that in the structure of Proud, as modified, one of the two side leg portions of the U-shaped member is readable as being capable of serving as an arcing horn as claimed.

11. Claims 14 and 17-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. Applicant's arguments are considered to have been addressed either directly or indirectly in the above grounds of rejection.

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARK T. LE whose telephone number is (571)272-6682. The examiner can normally be reached on Mon-Fri, between 8:15-4:45 (Teleworking).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samuel Morano can be reached on 571-272-6684. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Le/  
Primary Examiner  
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